INTERVIEW SUMMARY UNDER 37 CFR §1.133 AND MPEP §713.04

Two telephonic interviews in the above-referenced case were conducted on June 30, 2004 and July 8, 2004 between the Examiner and the Applicant's undersigned representative. During the first interview, the Final Office Action mailed on June 15, 2003 was discussed. Specifically, the rejections of claims 1-2 and the publication by Kim et al (2000 IEEE International Solid-State Circuits Conference paper 07803-5853-8/00) were discussed. Examiner suggested that example waveforms be provided. Circuit simulation waveforms supplied by the Applicant were faxed to the Examiner the following week. During the second interview, the circuit simulation waveforms were discussed to clarify the subject matter regarded as the invention. The Applicant wishes to thank the Examiner for his time and attention in this case.

REMARKS

Claims 1-2 stand rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al (2000 IEEE International Solid-State Circuits Conference paper 07803-5853-8/00). Claims 1-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Korean patent 10-0278551 ('551) and further in view of Jeong et al (US 6,094,103).

The rejection is respectfully traversed. With respect to claim 1, Kim et al does not teach or suggest a phase synchronous LC tank oscillator wherein "the phase of oscillation of each of the plurality of oscillator stages is substantially the same". The ring oscillator structure shown in Figure 26.3.2 of Kim et al has a phase difference between two coupled stages, therefore the oscillation is not phase synchronous. According to Kim et al, "after the negotiation between the couplings, the unit oscillators connected by the cross coupling have π/N phase differences and the direct-coupled oscillators have $(N-1)\pi/N$ phase differences." (Kim et al col. 1, paragraph 3). Similarly, ring oscillators such as Figure 10 of '551 or Figure 5 of Jeong et al also have a phase difference between two stages. Thus, neither '551 nor Jeong et al teach or suggest a phase synchronous LC tank oscillator wherein "the phase of oscillation of each of the plurality of oscillator stages is substantially the same". As such, claim 1 is believed to be allowable.

Claims 2-9 depend from claim 1 and are believed to be allowable for the same reasons described above.

Enclosed with this response are three diagrams of circuit simulation results for a phase synchronous LC tank oscillator embodiment shown in Figure 1 of the above-referenced patent application. They are the same waveforms discussed during the telephone interview on July 8.

Diagram 1 shows the transient response of the circuit between 0 – 30 nanoseconds. Diagram 2 shows a zoomed version of the transient response between 26.5 – 28.1 nanoseconds. Diagram 3 shows outputs of four oscillator stages.

Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

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